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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/575,202  | 04/10/2006  | Daisuke Kumaki       | 0553-0488           | 7114             |
| 26568   | 7590        | 10/06/2009           | EXAMINER            |                  |
| COOK ALEX LTD<br>SUITE 2850<br>200 WEST ADAMS STREET<br>CHICAGO, IL 60606 |             |                      | HO, ANTHONY         |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2815                |                  |
|   |             |                      | MAIL DATE           | DELIVERY MODE    |
|   |             |                      | 10/06/2009          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/575,202 | <b>Applicant(s)</b><br>KUMAKI ET AL. |  |
|                              | <b>Examiner</b><br>ANTHONY HO        | <b>Art Unit</b><br>2815              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 6, 2009 has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-17, 19-33 and 35-47 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsumoto et al (US PUB 2005/0098207).

In re claims 15, 16 and 32, Matsumoto et al discloses a light emitting device comprising: an anode (71) containing a light-transmitting material; a first layer (72 or 73) containing a light-emitting material over the anode; a second layer (74) containing an organic compound and an electron-supplying material; a third layer (76 or 77) including a transparent conductive film over the second layer; and a fourth layer (77 or 79) containing a hole transporting material over the third layer, the fourth layer in direct contact with the third layer; and a cathode (78) containing reflective metal over the fourth layer (i.e. Figure 19; Figure 20; Example 7).

In re claims 17 and 33, Matsumoto et al discloses using one of the listed materials for the cathode (see Figure 19 or 20).

In re claims 19, 20, 35 and 36, Matsumoto et al discloses using metal complexes for the second layer (see Figure 19 or 20).

In re claims 21, 22, 37 and 38, Matsumoto et al discloses using one of the listed metals (i.e. Li) for the organic compound (i.e. Example 7).

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In re claims 23-25 and 39-41, Matsumoto et al discloses an inorganic compound (i.e. vanadium oxide) contained in the fourth layer (see Figure 19 or 20).

In re claims 26-28 and 42-44, Matsumoto et al discloses using an organic compound for the hole transporting layer (see Figure 19 or 20).

In re claims 29, 30, 45 and 46, Matsumoto et al discloses the electron-receiving properties comprises metal oxide (see Figure 19 or 20).

In re claims 31 and 47, the recitation "wherein the electronic device is one selected from the group consisting of a television receiving machine, a personal computer, head mount display, a mobile phone and a video camera" in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Claims 32-38, 42-44 and 47 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Forrest et al (US Patent 5,703,436).

In re claim 32, Forrest et al discloses a light emitting device comprising: an anode (35) containing a light-transmitting material; a first layer (20E) containing a light-emitting material over the anode; a second layer (20T) containing an organic compound and an electron-supplying material; a third layer (middlemost 26I) including a transparent conductive film over the second layer; and a fourth layer (21H or 22H) containing a hole transporting material over the third layer; and a cathode (topmost 26M) containing reflective metal over the fourth layer (i.e. Figure 2A; Figure 2B; column 4 - column 6).

In addition, the recitation "for the light-emitting material" in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

In re claim 33, Forrest et al discloses using one of the listed materials for the cathode (i.e. column 4).

In re claim 34, Forrest et al discloses using ITO for the transparent conductive film (i.e. column 4).

In re claims 35 and 36, Forrest et al discloses using metal complexes for the second layer (i.e. column 7).

In re claims 37 and 38, Forrest et al discloses using one of the listed metals for the organic compound (i.e. column 7, column 10).

In re claims 42-44, Forrest et al discloses using an organic compound for the hole transporting layer (i.e. column 10 - column 11).

In re claim 47, the recitation “wherein the electronic device is one selected from the group consisting of a television receiving machine, a personal computer, head mount display, a mobile phone and a video camera” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the

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prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

### ***Claim Rejections - 35 USC § 103***

Claims 18 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al (US PUB 2005/0098207) as applied to claims 15, 16 and 33 above, and further in view of Forrest et al (US Patent 5,703,436).

Forrest et al discloses using ITO for the transparent conductive film (i.e. column 4).

The advantage is to produce an organic semiconductor device which is extremely reliable, substantially transparent when de-energized, and relatively inexpensive to produce (i.e. column 3).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the light emitting device as taught by Matsumoto et al with using ITO for the transparent conductive film as taught by Forrest et al in order to produce an organic semiconductor device which is extremely reliable, substantially transparent when de-energized, and relatively inexpensive to produce.



Claims 39-41 and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forrest et al (US Patent 5,703,436) as applied to claim 32 above, and further in view of Ishihara et al (US PUB 2003/0048072).

Ishihara et al discloses using materials such as molybdenum oxide and vanadium oxide for a hole-transport layer in an organic light emitting device (paragraph 0047).

The advantage is to have an appropriate level of ionization potential to lower the injection barriers in the light emitting device (paragraph 0047).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified the light emitting device as taught by Forrest et al with using materials such as molybdenum oxide and vanadium oxide for a hole-transport layer in an organic light emitting device as taught by Ishihara et al in order to have an appropriate level of ionization potential to lower the injection barriers in the light emitting device.

### ***Response to Arguments***

Applicant's arguments with respect to claims 15 and 16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY HO whose telephone number is (571)270-1432. The examiner can normally be reached on M-F: 9:30AM-5:00PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. H./

Examiner, Art Unit 2815

/Kenneth A Parker/

Supervisory Patent Examiner, Art Unit 2815